

Scientifically Based Progress Monitoring and Screening in RTI:

Critical Tools in the Tool Box

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Disclosure

Mark R. Shinn, Ph.D. Serves as a Consultant for *AIMSweb*, which provides CBM assessment materials and organizes and report the information from 3 tiers, including RTI

Mark R. Shinn, Ph.D. Serves as a Consultant for *Vmath*, a remedial mathematics intervention, from *Voyager*

Mark R. Shinn, Ph.D. Serves as a Consultant for Glencoe Publishing for their *Jamestown Reading Navigator (JRN)* product

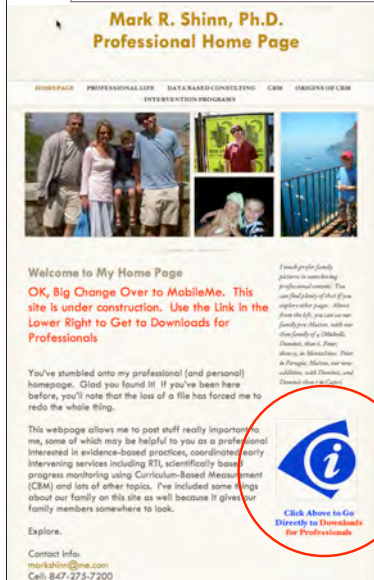
Much of This Presentation is Based on a Chapter Written for the RTI Answer Book

Shinn, M. R. (2010). Building a scientifically based data system for progress monitoring and universal screening across three tiers including RTI using Curriculum-Based Measurement. In M. R. Shinn & H. M. Walker (Eds.), *Interventions for achievement and behavior problems in a three-tier model, including RTI*. Bethesda, MD: National Association of School Psychologists.

Big Ideas

- One of the **Features** of Multi-Tier, Coordinated Early Intervening Services (aka RTI) is **Data-Based Decision Making**, Particularly **Screening** (Universal) and **Progress Monitoring**
- Schools Currently Are **Unsystematic** or Trying to Build Their Data System(s) Around Tests or **Practices Used in General Education** Classrooms; These Practices are **Not Scientifically Based** for Screening and Progress Monitoring
- Lots of Schools Collect CBM Data For Universal Screening and Progress Monitoring, But Not Many Use the Data Efficiently or in Best Practices**
- We Know How to **Increase Efficacy** and **Efficiency** of Progress Monitoring and Screening

Downloadable Materials



markshinn.org

1. Click on the **Downloads for Professionals Icon**
2. Click on the **Presentations and Handouts Folder**
3. Click on **Idaho RTI Conference 2010**

Some Particular Recommendations...

- Fuchs, L. S., & Fuchs, D. (1999). Monitoring student progress toward the development of reading competence: A review of three forms of classroom-based assessment. *School Psychology Review*, 28(4), 659-671.
- Fuchs, L. S., & Fuchs, D. (2004). *What is scientifically based research on progress monitoring?* Washington, DC: National Center on Progress Monitoring, American Institute for Research, Office of Special Education Programs.
- Fuchs, L. S., & Fuchs, D. (2008). Best practices in progress monitoring reading and mathematics at the elementary level. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 2147-2164). Bethesda, MD: National Association of School Psychologists.
- Shinn, M. R. (2008). Best practices in Curriculum-Based Measurement and its use in a Problem-Solving model. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 243-262). Bethesda, MD: National Association of School Psychologists.
- Shinn, M. R. (2010). Building a scientifically based data system for progress monitoring and universal screening across three tiers including RTI using Curriculum-Based Measurement. In M. R. Shinn & H. M. Walker (Eds.), *Interventions for achievement and behavior problems in a three-tier model, including RTI*. Bethesda, MD: National Association of School Psychologists.

(Nearly) Everyone Agrees...

The Big Ideas for Preventing Reading Failure in Grades K-3:

1. Increase the quality, consistency, and reach of instruction in every K-3 classroom
2. **Universal Screening** and **Timely** and **Valid Assessments** of **Reading Growth** for **Progress Monitoring**
3. Provide more intensive interventions to “catch up” the struggling readers

Modified from J. Torgeson, www.fcrr.org

In Theory, Any Achievement Test Can Be Used for Progress

Presuming It Identifies the **Sensitive to Improvement in Student Achievement** In a **Reasonable Period** of Time to Be Used Formatively

In Theory, Any Achievement Test Can Be Used for Universal

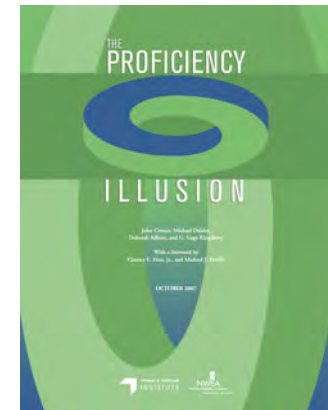
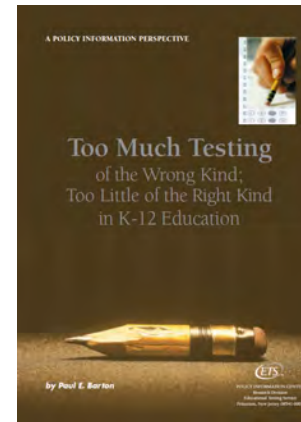
Presuming It Identifies the “Right Kids”--

Those Who Need More Intensive Intervention

Presuming It Identifies the “Right Number”
of Kids--

Aligned with the Availability of Resources

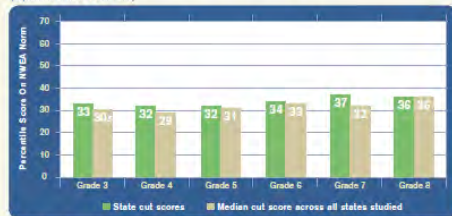
A Couple of Excellent Reads



Barton, P. E. (1999). *Too much testing of the wrong kind; Too little of the right kind in K-12 education*. Princeton, NJ: Educational Testing Service, Research Division.
Cronin, J., Dahlin, M., Adkins, D., & Kingsbury, G. G. (2008). *The proficiency illusion*. Washington, DC: Thomas B. Fordham Institute, Northwest Evaluation Association.

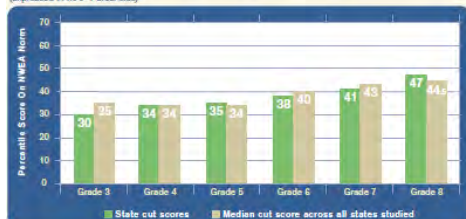
I Say This Because...

Figure 1 – Idaho Reading Cut Scores in Relation to All 26 States Studied, 2006
(expressed in MAP Percentiles)



Note: This figure compares reading test cut scores (“proficiency passing scores”) as percentiles of the NWEA norm. Idaho’s percentiles are compared with the median cut scores of all 26 states reviewed in this study. Idaho’s cut scores are consistently at or above the median.

Figure 2 – Idaho Mathematics Cut Scores in Relation to All 26 States Studied, 2006
(expressed in MAP Percentiles)



Note: Idaho’s math test cut scores are shown as percentiles of the NWEA norm and compared with the median cut scores of all 26 states reviewed in this study. Idaho’s cut scores are consistently within 5 percentiles of the median.

Range from 32nd
Percentile (Grade
4) to
37th Percentile
(Grade 7)

Range from 30th
Percentile (Grade
3) to
47th Percentile
(Grade 8)

First Step

*Don’t Reinvent the
Wheel:*

Use Proven Tools!



“PROVEN” By Review of the National RTI Center

www.rti4success.org

National RTI Center Progress Monitoring Results

General Outcome Measures											
Mastery Measures											
TOOLS	AREA	Reliability of the Performance Level Score	Reliability of the Slope	Validity of the Performance Level Score	Predictive Validity of the Slope of Improvement	Alternate Forms	Sensitive to Student Improvement	End-of-Year Benchmarks	Rates of Improvement Specified	Norms Disaggregated for Diverse Populations	Disaggregated Reliability and Validity Data
AIMSweb	Math	●	●	●	●	○	○	●	●	No	●
	Oral Reading	●	●	●	●	●	○	●	●	No	●
	Test of Early Literacy - Letter Naming Fluency	●	●	●	●	●	○	●	●	No	●
	Test of Early Literacy - Letter Sound Fluency	●	●	●	●	●	○	●	●	No	●
	Test of Early Literacy - Nonsense Word Fluency	●	●	●	●	●	○	●	●	No	●

Chart Legend: ● Convincing Direct Evidence | ○ Partially Convincing Evidence or Convincing Indirect Evidence | ○ Unconvincing Evidence | — No Evidence Submitted

National RTI Center PM Results

General Outcome Measures											
Mastery Measures											
TOOLS	AREA	Reliability of the Performance Level Score	Reliability of the Slope	Validity of the Performance Level Score	Predictive Validity of the Slope of Improvement	Alternate Forms	Sensitive to Student Improvement	End-of-Year Benchmarks	Rates of Improvement Specified	Norms Disaggregated for Diverse Populations	Disaggregated Reliability and Validity Data
Curriculum Based Measurement in Reading (CBM-R)	Letter Sound Fluency	●	●	●	●	●	●	●	●	No	—
	Maze Fluency	●	●	●	●	●	●	●	●	No	—
	Passage Reading Fluency	●	●	●	●	●	●	●	●	No	—
	Word Identification Fluency	●	●	●	●	●	●	●	●	No	—
	Initial Sound Fluency	●	—	●	—	●	●	○	○	No	—

Chart Legend: ● Convincing Direct Evidence | ○ Partially Convincing Evidence or Convincing Indirect Evidence | ○ Unconvincing Evidence | — No Evidence Submitted

Most Tools (6 of 9) are Members of the CBM “Family”

AIMSweb	CBM
Reading CBM (R-CBM)	CBM
DIBELS	CBM
Monitoring Basic Skills Progress	CBM
Mclass Math	?
Scholastic	NO
STAR	NO
STEEP	CBM
Yearly Progress Pro (YPP)	CBM

National RTI Center Minimum Criteria

(1) Can you provide **direct** evidence* on the effects of using your tool?

*Direct evidence refers to data from a study that has been conducted based on the tool submitted for evaluation. Studies that use data from the use of another tool, even if it is similar, are considered indirect evidence and will not be considered as adequate evidence for the purposes of this review.

(2) Do you have the following **classification data for your tool**?

- a. Specificity
- b. Sensitivity
- c. Positive predictive power
- d. Negative predictive power
- e. Kappa

(3) Is your **outcome** variable a **reading** measure?

(4) Are there at least **three months between the screening** and your **outcome**

National RTI Center Screening Review Results

TOOLS	AREA	Classification Accuracy	Generalizability	Reliability	Validity	Disaggregated Reliability, Validity, and Classification Data for Diverse Populations	Efficiency			
							Administration Format	Administration & Scoring Time	Scoring Key	Norms/Benchmarks
AIMSweb	Reading Curriculum Based Measurement (R-CBM)	●	Moderate High	●	●	—	Individual	2 Minutes	Yes	Yes
Dynamic Indicators of Basic Early Literacy Skills (DIBELS)	Letter Naming Fluency	○	Moderate Low	●	●	—	Individual	2 Minutes	Yes	Yes
	Nonsense Word Fluency	●	Moderate Low	●	●	○	Individual	2 Minutes	Yes	Yes
	Oral Reading Fluency	●	Moderate High	●	●	●	Individual	2 Minutes	Yes	Yes
	Phoneme Segmentation Fluency	○	Moderate Low	●	○	●	Individual	2 Minutes	Yes	Yes
Scholastic	Phonics Inventory - Screener Version	●	Moderate High	●	●	—	Individual Group	10 Minutes	Computer Scored	No
STAR	Early Literacy	●	Broad	●	●	●	Individual Group	10 Minutes	Computer Scored	Yes
	Reading	●	Moderate High	●	●	●	Individual Group	10 Minutes	Computer Scored	Yes
STEEP	Oral Reading Fluency	●	Moderate High	●	●	—	Individual	1 Minute	Yes	Yes

Chart Legend: ● Convincing Evidence | ● Partially Convincing Evidence | ○ Unconvincing Evidence | — No Evidence Submitted

CBM Tools

Reading Curriculum-Based Measurement

Reading-Maze

Spelling

Written Expression

Math Computation

Math Application

Early Literacy

Letter Names

Letter Sounds

Nonsense Words

Early Numeracy

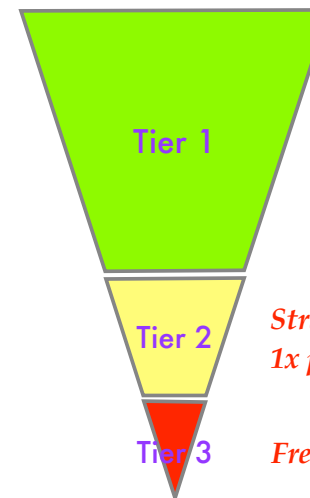
Oral Counting

Number Identification

Missing Number

Quantity Discrimination

A Common and Coordinated Data System Can Be Created with CBM and Basic Skills



Tier 1

Tier 2

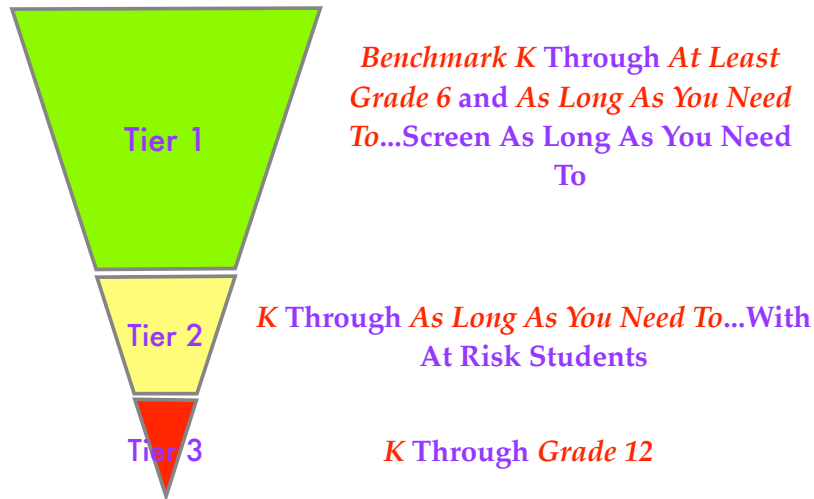
Tier 3

Benchmark Using CBM 3x Per Year
for Universal Screening AND
Progress Monitoring-AND
Program Evaluation

Strategic Monitoring of At Risk Students
1x per Month, or 2x per Month or Weekly

Frequent Monitoring 1x or 2x per Week

How Long Do We Screen and Progress Monitor with CBM?



Next Step

We Get “Better” by Knowing What We Are Assessing

Consequences...

<i>Fluency</i>	<i>General Reading Ability</i>
Goal is to <i>Read Fast</i>	Goal is to <i>Read WELL</i>
Interventions Emphasize <i>Speed</i>	Interventions Emphasize <i>Quality</i>
Interventions are “Slices” or <i>Band-aids</i>	Interventions are Integrated or <i>Bandages</i>

The Intervention Effects of “Reading Faster”?

Implementing *repeated reading* and wide reading interventions without more formative intervention is not likely to be valuable (p. 9)

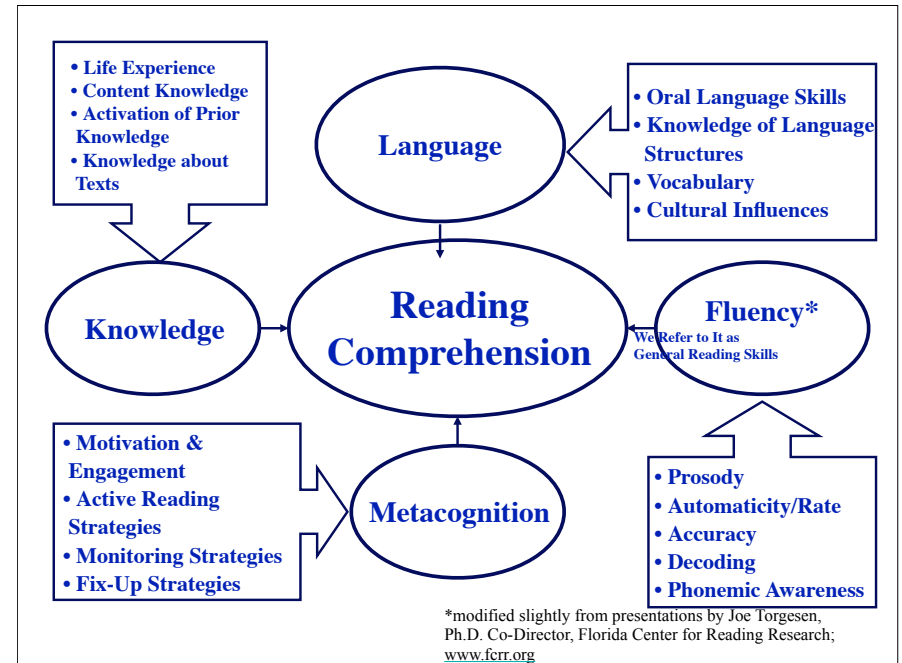
Wexler, J., Vaughn, S., Roberts, G., & Denton, C. A. (2010). The efficacy of repeated reading and wide reading practice for high school students with severe reading disabilities. *Learning Disabilities Research & Practice*, 25, 2-10.

Our results indicate that *repeated reading* does not qualify as an evidence-based or promising practice for students with or at risk for learning disabilities (p. 276)

Chard, D. J., Ketterlin-Geller, L. R., Baker, S. K., Doabler, C., & Apichatabutra, C. (2009). Repeated reading interventions for students with learning disabilities: Status of the evidence. *Exceptional Children*, 75, 263-281.

R-CBM is an IRI on Steroids...

Problem	Solution
<i>Different Ways</i> of Doing an IRI	<i>Standardize the Directions</i>
100 Word Passages <i>Were Challenging for Low Performers</i> , Too Short for Good Readers	<i>Fix the Length of the Test Time, Not the Length of the Test Materials</i>
<i>Accuracy Scores</i> Don't Correlate Nor Are Sensitive to Meaningful Improvement	<i>Find a Better Score That IS Correlated and Sensitive (WRC)</i>

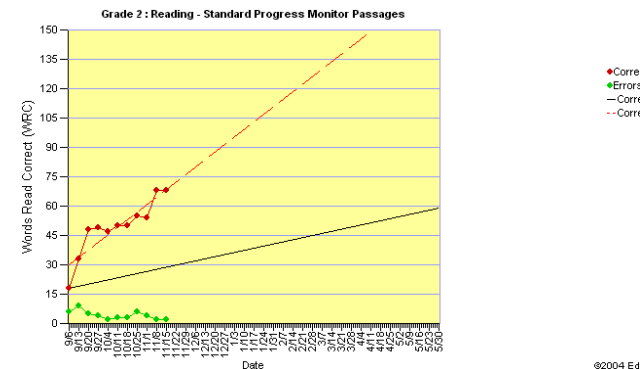


Next Steps

We Get "Better" by
Focussing On Progress
Monitoring

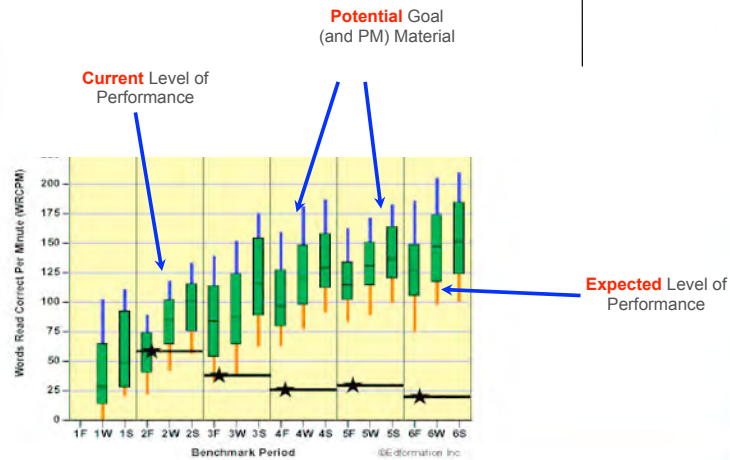
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The Gold Standard for IEP Goals and Frequent Progress Monitoring

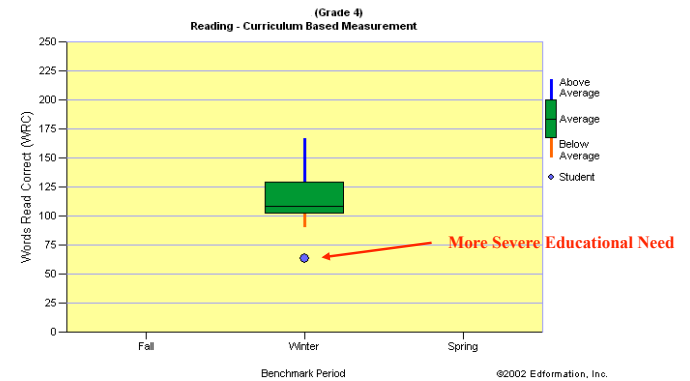


In 1 year, Johnny will read 60 WRC with less than 3 errors in Grade 2 Reading Passages.

Know How to Do a Survey Level Assessment to Write Individualized Goals



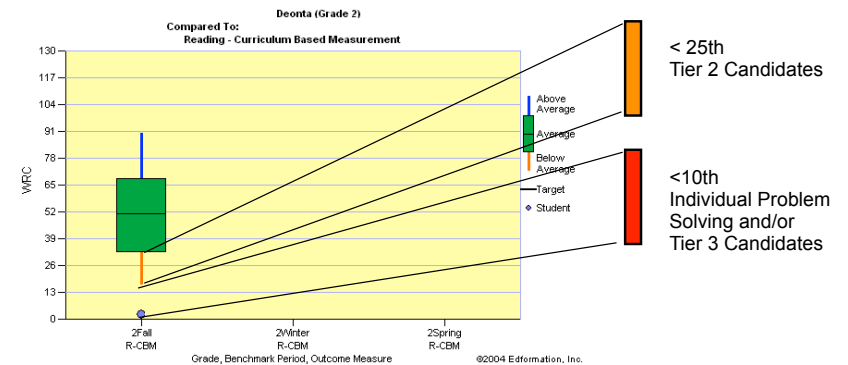
Universal Screening to Identify Need: A Significant Performance Discrepancy

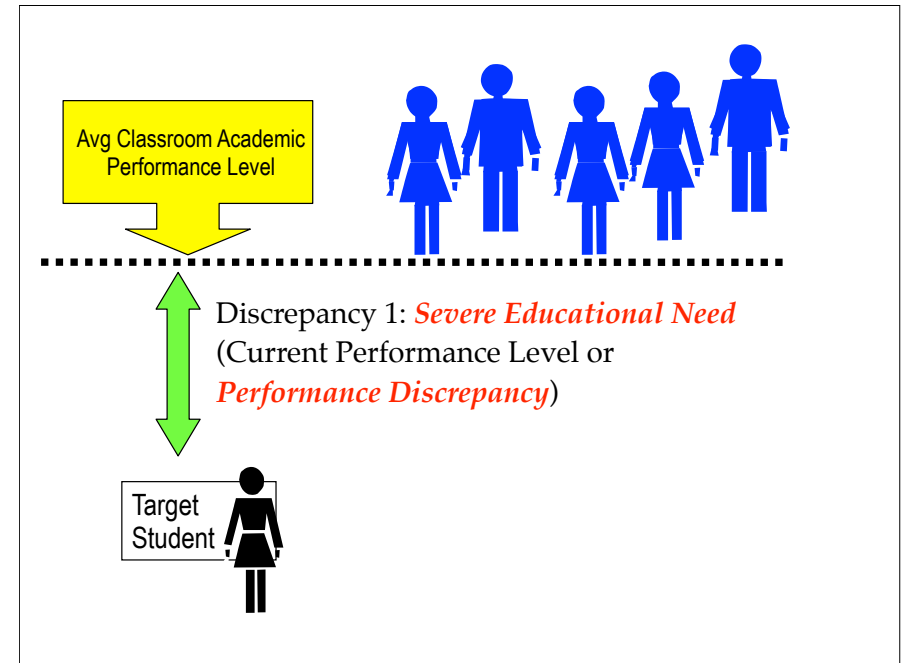
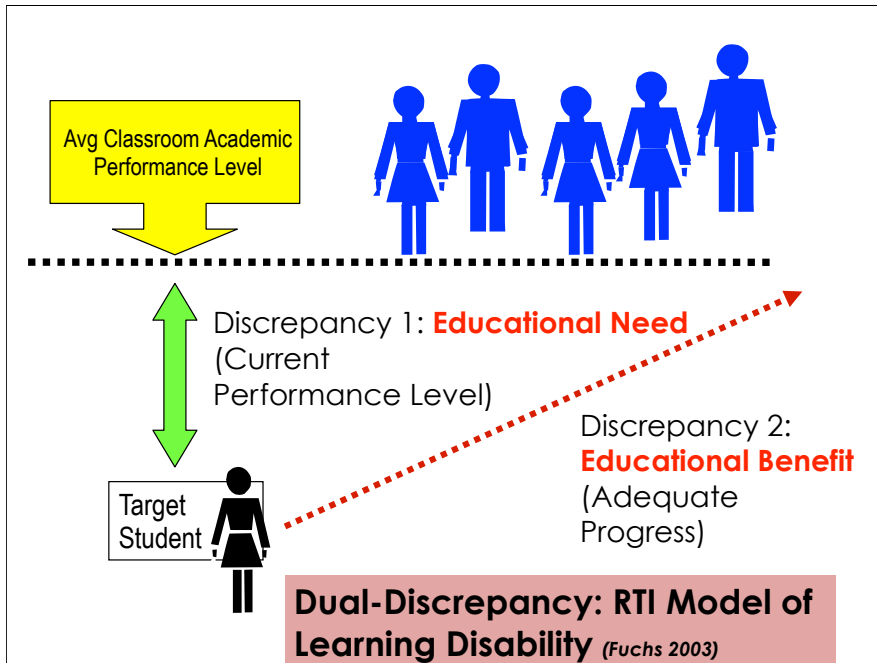


No Failing in Tier 1 Before You Get Tier 2

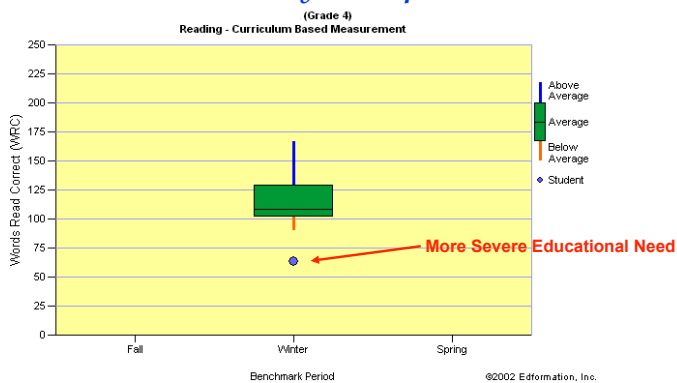
No Failing in Tier 2 Before You Get Tier 3

Triage: Aligning Need with Tiered



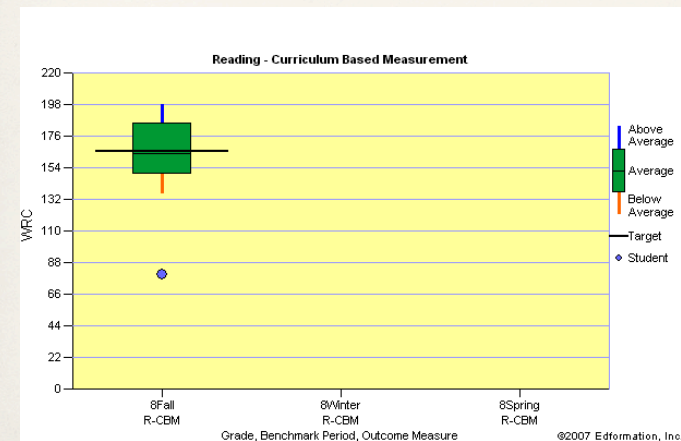


Educational Need: A Significant Performance Discrepancy Elementary Example



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Educational Need: A Significant Performance Discrepancy Secondary Example



When Push Comes to Shove...Underpinnings of Legal and Regulatory Requirements

(B) ADDITIONAL AUTHORITY- In determining whether a child has a specific learning disability, a local educational agency may use a process which determines if a child *responds* to scientific, research-based intervention as a *part of the evaluation* procedures in paragraphs (2) and (3).

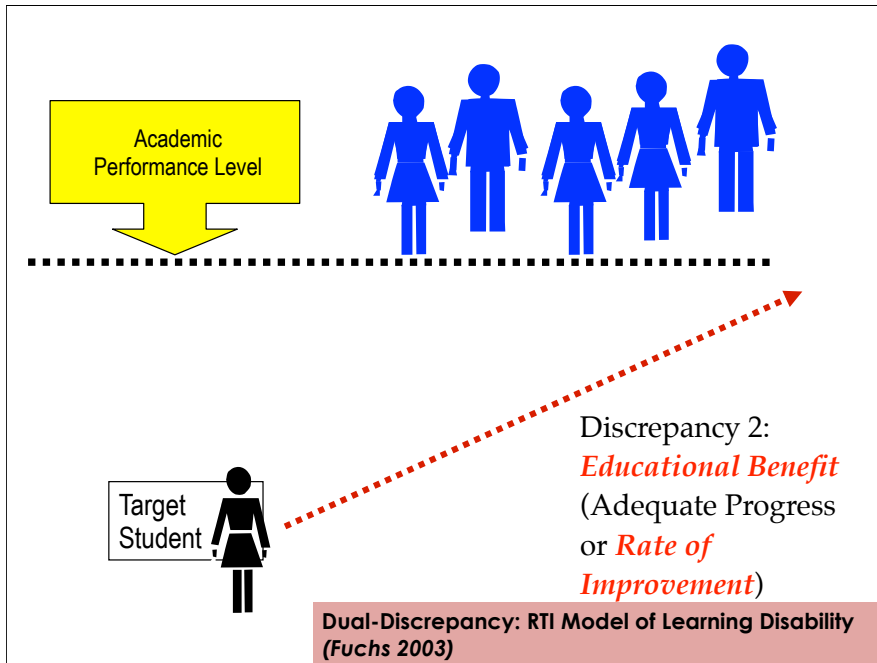
Data-based documentation of repeated assessments of achievement at reasonable intervals, reflecting *formal assessment of student progress* during instruction, which was provided to the child's parents.

(3) Use *technically sound instruments* that may assess the relative contribution of cognitive and behavioral factors, in addition to physical or developmental factors.

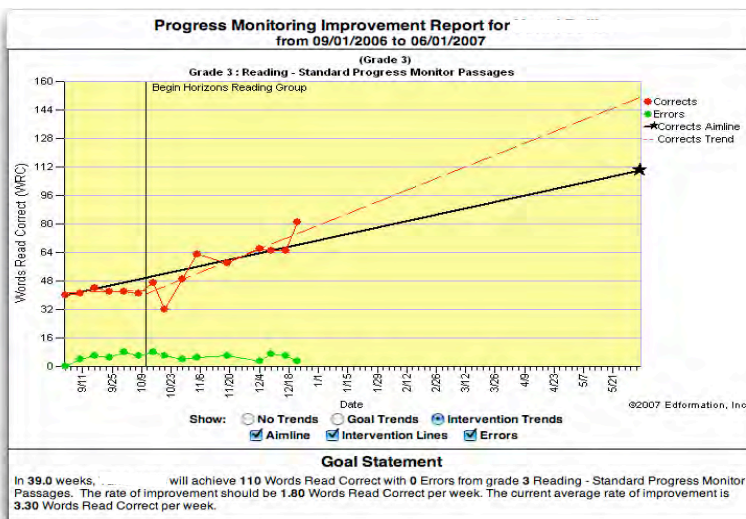
(c) *Other evaluation procedures*. Each public agency must ensure that--

(1) *Assessments and other evaluation materials* used to assess a child under this part--...

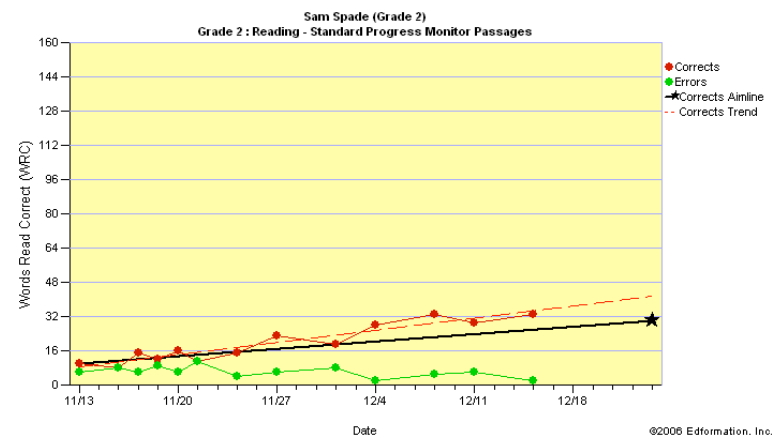
(iii) Are *used for the purposes* for which the assessments or measures are *valid and reliable*;



Progress Toward IEP Goals to Ensure Powerful Programs and IEP Revision



The SAME Progress Monitoring Practices Can Be Used to Assess Student's RTI as Part of SLD Entitlement



Use Maze 3-Minute Silent Reading Test to Save Some Time

Can Be Group
Administered

Serves as an
Efficient Screener

Low Cost Progress
Monitoring with
Older Students

CBM-Maze Passage

Once upon a time there was a merchant whose wife died, leaving him with three daughters.

The two elder daughters were good-looking (out, stand, then) very disagreeable. They cared only for (until, themselves, himself) and for their appearance; they spent (palace, wicked, most) of the time admiring their reflections (in, of, turned) a looking glass.

The third and youngest (once, daughter, gate) was quite different from the other (him, two, beast). She was beautiful—so beautiful that (I, loved, she) was known as Beauty. She was (also, ago, dream) good and kind. Everyone loved Beauty (changed, by, except) for her sisters who were jealous (handsome, of, from) her. They hated her.

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Know How to Define a Severe Basic Skill Problem at High School

End of Grade 6 Proficiency
(50th Percentile)

If a Student Reading Grade 6
< 160 WRC, Consider Tier 3

End of Grade 7 Proficiency
(50th Percentile)

If a Student Reading Grade 7
< 158 WRC, Consider Tier 3

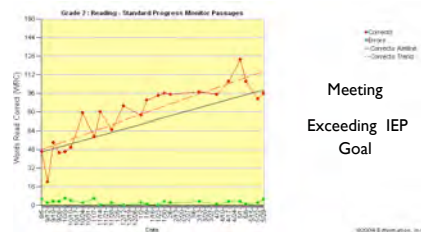
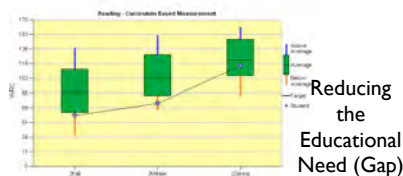
Significantly Below Grade 8
Standard
(10th Percentile)

If a Student Reading Grade 8
< 84 WRC, Consider Tier 3

AIMSweb® Growth Table
Reading - Curriculum Based Measurement
Multi-Year Aggregate
2009-2010 School Year

Grade	%ile	Fall	Winter	Spring	ROI
		Num	WRC	Num	WRC
4					
	StdDev	40	42	43	
	90	164	172	169	1.0
	75	128	146	162	0.9
	50	103	119	152	0.8
	25	78	95	105	0.8
	10	54	69	89	0.7
	Mean	104	120	133	
	StdDev	39	41	43	
5					
	90	171	187	201	0.8
	75	147	162	177	0.8
	50	116	133	148	0.9
	25	80	103	116	0.7
	10	56	73	83	0.6
	Mean	118	132	146	
	StdDev	42	43	44	
6					
	90	185	199	213	0.8
	75	162	172	187	0.7
	50	135	148	160	0.7
	25	108	120	132	0.7
	10	78	91	102	0.7
	Mean	133	145	158	
	StdDev	42	43	44	
7					
	90	185	196	208	0.6
	75	162	173	186	0.7
	50	135	145	158	0.6
	25	109	119	130	0.6
	10	86	93	101	0.4
	Mean	135	145	156	
	StdDev	40	41	43	
8					
	90	185	192	201	0.4
	75	164	172	182	0.5
	50	142	149	158	0.4
	25	114	122	132	0.5
	10	84	92	102	0.5
	Mean	138	145	155	
	StdDev	40	40	40	

Annual Review: Benchmark and IEP Progress



What Would Be The Consequences of Allocating Services Based on This Triangle?

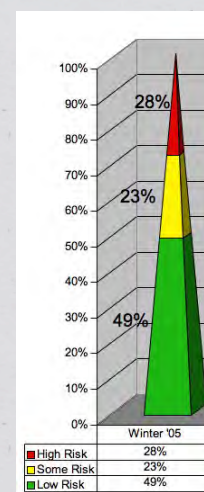
Most Common Interpretation

- 23% of Students Need Tier 2
- 28% of Students Need Tier 3

Better Interpretation

- Many Students Need a More Effective Program(s)
- The Core (Tier 1) Programs Needs to Be Strengthened Significantly--

That is..The CORE Needs to Have the
Features of Tier 2 in Higher Achieving
Communities



Courtesy of Christine Martin, Indian Prairie School District, IL



Common Early Literacy Assessment Schedule

Kindergarten			First Grade			Second Grade		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Initial Sound Fluency (ISF)	ISF	LNF	LNF	PSF	PSF	NWF	ORF	ORF
Letter Naming Fluency (LNF)	LNF	PSF	PSF	NWF	NWF	ORF	WUF	WUF
	PSF	NWF	NWF	Oral Reading Fluency (ORF)	ORF	WUF	RTF	RTF
			Word Use Fluency (WUF)	WUF	WUF	RTF		
				Retell Fluency (RTF)	RTF			

More Efficient Early Literacy Assessment Schedule

Kindergarten			First Grade			Second Grade		
Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring
Letter Naming Fluency	Letter Sounds	Highly Decodable Passages or Word Lists or NWF	Oral Reading	Oral Reading	Oral Reading	Oral Reading	Oral Reading	Oral Reading
Letter Sounds	↓	↓	↓	↓	↓			
	PSF	Letter Sounds	Highly Decodable Passages or Word Lists or NWF	Highly Decodable Passages or Word Lists or NWF	Highly Decodable Passages or Word Lists or NWF			
		↓	↓	↓	↓			
		PSF	Letter Sounds	Letter Sounds	Letter Sounds			

Big Ideas

- One of the **Features** of Multi-Tier, Coordinated Early Intervening Services (aka RTI) is **Data-Based Decision Making**, Particularly **Screening** (Universal) and **Progress Monitoring**
- Schools Currently Are **Unsystematic** or Trying to Build Their Data System(s) Around Tests or **Practices Used in General Education** Classrooms; These Practices are **Not Scientifically Based** for Screening and Progress Monitoring
- Lots of Schools Collect CBM Data But Not Many Use the Data Efficiently or in Best Practices**
- We Know How to **Increase Efficacy** and **Efficiency** of Progress Monitoring and Screening